

Australian Bat Lyssavirus

Australian bat lyssavirus (ABLV) is a virus that can be transmitted from bats to humans, causing serious illness. The virus was first identified in 1996 and has been found in four kinds of flying foxes/fruit bats and one species of insect-eating microbat. Blood tests have shown previous infection in a number of other bat species, so it is assumed that any bat in Australia could carry the virus.

While ABLV is more likely to be found in a sick or injured bat, bats that appear healthy may also be infectious. Surveys of wild bat populations have indicated less than one percent of bats carry ABLV. In sick and injured bats, around 7% have been found to carry the virus.

ABLV is one of twelve types of lyssavirus which are found around the world. ABLV is the only one of these known to occur in Australia. ABLV is closely related but not identical to rabies virus, which causes a serious and usually fatal disease in humans.

Signs and Symptoms:

ABLV infection in humans causes a serious illness which results in paralysis, delirium, convulsions and death. Since November 1996, three people have died as a result of ABLV infection, after being bitten or scratched by bats.

Treatment:

Rabies vaccine that is given after exposure to ABLV, but before a person becomes unwell, will prevent the disease. However once a person develops the disease there is no specific treatment for ABLV.

Proper cleaning of the wound reduces the risk of infection. If bitten or scratched, immediately wash the wound thoroughly with soap and water for at least five minutes. If available, an antiseptic with anti-virus action such as povidone-iodine or alcohol (ethanol) should be applied after washing. If bat saliva contacts the eyes, nose or mouth, flush the area thoroughly with water for several minutes.

Seek medical advice about the need for rabies vaccination as soon as possible, preferably on the same day or early in the day after the exposure to the bat occurred.

A tetanus injection may also be necessary after a bat bite or scratch.

While bat faeces, urine and blood are not considered to pose a risk of ABLV, contact with any bat fluids should generally be avoided. If you have any contact with bat fluids, wash your hands (or other affected area) immediately.

Transmission:

The virus can be transmitted from bats to humans when infected bat saliva enters the human body, usually by a bite or scratch, but also by getting bat saliva in the eyes, nose or mouth (mucous membrane exposure) or onto a pre-existing break in the skin.

The virus is also found in the nervous system of affected bats. Therefore needlesticks or cuts from a sharp item that has been used on a bat, or coming into contact with brain tissue from a bat, are also possibly ways of transmitting ABLV.

ABLV is unlikely to survive outside the bat or in a dead bat for more than a few hours, especially in dry environments that are exposed to sunlight. Coming into contact with bat faeces, urine or blood do not pose a risk of exposure to ABLV, nor do living, playing or walking near bat roosting areas. There is no evidence to suggest ABLV could be contracted by eating fruit partially eaten by a bat. However, any fruit that has been partially eaten by any animal should be discarded as it could be contaminated by a variety of germs.

The time from exposure to the virus to the start of symptoms is variable; of the three known human cases of ABLV infection, one became ill several weeks after being bitten by a bat and another became ill more than two years after a bat bite. The timeframe around exposure of the third case is not confirmed. Classical rabies virus also shows a wide variability in time between exposure and illness, from weeks to years. Therefore, it is vital to seek medical advice even if some time has elapsed since the exposure.

Prevention:

1. **Do not touch bats, even if they are injured.**

Only vaccinated people who have been trained in the care of bats should ever handle bats or flying foxes. People who come across an injured bat should contact the Department of Environment and Heritage Protection (1300 130 372), RSPCA (1300 ANIMAL) or local wildlife care groups/rescuers/carers for assistance. Do not touch the bat.

2. **Rabies vaccination**

Rabies vaccine is used to protect against ABLV infection. Even if a person has had rabies vaccine before, further rabies vaccinations will be required if they are exposed to ABLV.

There are two types of vaccine that may be used:

- **Rabies Vaccine** contains killed virus that cannot cause the disease. The vaccine stimulates a person's immune system to develop antibodies that will recognise and kill the virus before it has time to cause illness.
- **Human Rabies Immunoglobulin (HRIG)** is made from blood donated by people who have been vaccinated against rabies. It is a concentrated form of antibodies against rabies virus. HRIG may be recommended for immediate protection for people who are exposed to ABLV and have never had rabies vaccination before. As much as possible of the HRIG dose is injected around the exposure site, with any remainder given as an injection into a muscle such as the buttock or thigh.

Pre-exposure vaccination

Pre-exposure vaccination is recommended for anyone who plans to care for bats, or will come into contact with bats during the course of their work. A course of three rabies vaccine injections is given over one month (days zero, seven and 28). **The vaccine does not offer protection until after the third dose is given and people should not handle bats until two weeks after the course is complete.**

People at ongoing risk of exposure should have a blood test to check their immunity every 2 years and receive a booster vaccination if not immune.

Post-exposure vaccination

Anyone who has possibly been exposed to ABLV, but who has never had a course of rabies vaccine before, will require four rabies vaccine injections over two weeks (on days zero, three, seven, and 14) and also may require an injection of Immunoglobulin (HRIG). People with a weak immune system will require a further (fifth) dose of vaccine given at day 28 and a blood test after this last dose.

Anyone who has previously had rabies vaccinations will require two further doses of vaccine after a possible exposure to ABLV (day zero and three).

Because the disease caused by ABLV is lethal, all people who are exposed to this virus should have the injections. This includes where there is a possibility of allergic reactions, or during pregnancy, or for women who are breastfeeding. If problems are encountered during the vaccination course, specialist advice is sought about the risks of the reactions compared with the risks of developing the disease.

Post-exposure vaccination is recommended regardless of how long ago the exposure occurred.

Queensland Health funds post-exposure vaccinations, and your local public health unit will arrange for the injections to be delivered to your GP or hospital.

If the bat is available to be tested for ABLV, post-exposure vaccination can be postponed for up to 48 hours after the exposure while waiting for results. There is no need for rabies vaccination if the bat does not have ABLV. If more than 48 hours will pass before results are available, the rabies vaccination course is commenced, but stopped if the bat does not have ABLV.

Testing for the bat is arranged by the local public health unit. The bat should only be euthanised by an authorised wildlife organisation, state agricultural department or veterinarian.

Other resources:

[Kids and Bats](https://www.health.qld.gov.au/__data/assets/pdf_file/0021/437700/kidsandbats-poster.pdf) (https://www.health.qld.gov.au/__data/assets/pdf_file/0021/437700/kidsandbats-poster.pdf)

[Department of Environment and Heritage Protection](http://www.ehp.qld.gov.au/wildlife/livingwith/flyingfoxes/) (<http://www.ehp.qld.gov.au/wildlife/livingwith/flyingfoxes/>)

Related content

[Bats and human health fact sheet](http://conditions.health.qld.gov.au/HealthCondition/condition/14/217/14/Bats-human-health)

(<http://conditions.health.qld.gov.au/HealthCondition/condition/14/217/14/Bats-human-health>)

[Rabies vaccine and human rabies immunoglobulin \(HRIG\) fact sheet](http://conditions.health.qld.gov.au/HealthCondition/condition/14/119/117/Rabies-vaccine-human-rabies-immunoglobulin)

(<http://conditions.health.qld.gov.au/HealthCondition/condition/14/119/117/Rabies-vaccine-human-rabies-immunoglobulin>)

Help and assistance:

For further information, please contact your local doctor or nearest [public health unit](https://www.health.qld.gov.au/system-governance/contact-us/contact/public-health-units)

(<https://www.health.qld.gov.au/system-governance/contact-us/contact/public-health-units>) or the 13HEALTH information line (13 432584).

Footnotes

Animal Health Australia (2009). Disease strategy: Australian bat lyssavirus (V3.0) Australian Veterinary Emergency Plan (AUSVETPLAN), Edition 3, Primary Industries Ministerial Council, Canberra, ACT.

Heymann, D (Ed) 2008. Control of Communicable Diseases Manual, 19th edition Washington, DC: American Public Health Association, 438-447.

National Health and Medical Research Council, 2008. The Australian Immunisation Handbook (9th Ed.) Canberra: National Capital Printing.